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ELLSWORTH R. ROSTON, ESQ.  
FULWIDER PATTON LEE & UTECHT, LLP  
HOWARD HUGHES CENTER  
6060 CENTER DRIVE, TENTH FL.  
LOS ANGELES, CA 90045

EXAMINER

SMITH, TERRI L

ART UNIT PAPER NUMBER

3762

DATE MAILED: 07/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/611,696	DRAKULIC, BUDIMIR	
	<b>Examiner</b>	<b>Art Unit</b>	
	Terri L. Smith	3762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) 41-59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 1–40 in the reply filed on 15 May 2006 is acknowledged. The traversal is on the ground(s) that the Examiner has provided no evidence to support the allegation that the existence of “recognized divergent subject matter” is a reason for insisting upon restriction, such as patents or separate fields of search, as required by MPEP 808.02. This is not found persuasive because Examiner provided separate fields of search, class/subclass 600/509 and class/subclass 128/901, in the Office Action mailed on 11 April 2006 in paragraph 1, lines 2 and 3, respectively.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the Examiner regards as his invention.

3. Claims 1–34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

In claim 1, “in combination” is vague. It is unclear what “in combination” is. It is suggested to use “A device” or “An apparatus.”

In claim 4, “the impedance of the patient's skin” and “the electrode is attached” is vague. A person's skin impedance or the electrode is “attached” to the skin cannot be claimed. It is suggested to use “adapted ...” language.

In claim 5, “the impedance of the patient’s skin” and “the electrode is attached” is vague. A person’s skin impedance or the electrode is “attached” to the skin cannot be claimed. It is suggested to use “adapted ...” language.

Claim 6 recites the limitation “the selective positions” in lines 2–3. There is insufficient antecedent basis for this limitation in the claim. Additionally, “in combination” is vague. It is unclear what “in combination” is. It is suggested to use “A device” or “An apparatus.”

In claim 13, “in combination” is vague. It is unclear what “in combination” is. It is suggested to use “A device” or “An apparatus.”

In claim 16, “the patient’s skin” is vague. A person’s skin cannot be claimed. It is suggested to use “adapted ...” language.

In claim 17, “the patient’s skin” is vague. A person’s skin cannot be claimed. It is suggested to use “adapted ...” language.

In claim 20, “the patient’s skin” is vague. A person’s skin cannot be claimed. It is suggested to use “adapted ...” language.

In claim 21, “in combination” is vague. It is unclear what “in combination” is. It is suggested to use “A device” or “An apparatus.” Further, “coupled” is vague. It is suggested to use “adapted to be coupled.”

In claim 25, “in combination” is vague. It is unclear what “in combination” is. It is suggested to use “A device” or “An apparatus.” Further, “coupled” is vague. It is suggested to use “adapted to be coupled.”

In claim 35, “in combination” is vague. It is unclear what “in combination” is. It is suggested to use “A device” or “An apparatus.”

In claim 38, "in combination" is vague. It is unclear what "in combination" is. It is suggested to use "A device" or "An apparatus."

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 35 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Blancke, U.S. Patent 4, 243,044.

6. Blancke discloses an electrode constructed to be attached to the patient's skin at an individual one of the selective positions to provide signals indicative of the parameters on the patient's body at the selective positions (Fig. 1) and an amplifier constructed to pass signals from an electrode without loss in signal strength and without any change in signal characteristics (column 5, lines 22–24) (claim 1); a circuit connected to an amplifier (Figs. 1, 1A and 1B) (claim 36).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3762

8. Claims 1, 2, 13–15, 18, 19, 21, 22, 24, 25, 27, 28, 30–32, and 38–40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Traub et al., U.S. Patent 5,427,111, and in view of Gober, U.S. Patent 5,052,398.

9. Regarding claim 1, Traub et al. disclose an electrode constructed to be attached to the patient's skin at one of the selective positions to provide signals indicative of the parameters on the patient's body at the one of the selective positions (Fig. 3; element 25; or Fig. 4, element 45), an amplifier having an input terminal with an impedance approaching infinity (column 10, lines 6–8) and providing at an output terminal signals corresponding to the signals from the electrode (Figs. 3–4), and an output stage connected to the amplifier (Figs. 3–4). Traub et al. do not disclose an output stage to pass signals at frequencies below a particular value. However, Gober discloses an output stage to pass signals at frequencies below a particular value (column 3, lines 31–32 and 30–40) to improve and enhance signal processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Traub et al. to include an output stage to pass signals at frequencies below a particular value, as taught by Gober to provide an optimally performing device for signal processing.

10. With respect to claims 2, Traub et al. disclose a second electrode is constructed to be attached to the patient's skin at a position displaced from the first electrode (26 or 46) and wherein a second amplifier corresponding to the first amplifier is connected to the second electrode (Figs. 3–4) and wherein a common mode rejection is provided to the signals from the electrodes (Figs. 3–4).

Art Unit: 3762

11. With respect to claims 13, 21, 25, and 38, Traub et al. disclose a first electrode constructed to be attached to a patient's skin at a first one of the selective positions to provide signals representing the patient's parameters at these positions, a second electrode constructed to be attached to the patient's skin at a second one of the selective positions different from the first position to provide reference signals (Figs. 3–4), a pair of amplifiers respectively connected to the first and second electrodes (Figs. 3–4) and having properties of providing a high input impedance approaching infinity (column 10, lines 6–8) and having a low output impedance (column 4, lines 24–25); output signals representing the difference between the signals on electrodes and without changes in the characteristics of the difference of the signals between electrodes (column 4, lines 18 and 22), the amplifiers being differentially connected to each other (Figs. 3–4). Traub et al. do not disclose a low pass filter connected to the amplifiers and for passing signals at relatively low frequencies. However, Gober discloses a low pass filter connected to the amplifiers and for passing signals at relatively low frequencies (Fig. 2, element 42; column 3, lines 31–32 and 30–40) to improve and enhance signal processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Traub et al. to include a low pass filter connected to the amplifiers and for passing signals at relatively low frequencies, as taught by Gober to provide an optimally performing device for signal processing.

12. Regarding claim 14, Traub et al. disclose amplifiers are constructed to obtain the difference between the signals on the first and second electrodes and are provided without substantially identical constructions (Figs. 3–4).

Art Unit: 3762

13. With respect to claims 15 and 39, Traub et al. disclose amplifiers provide a differential relationship (Fig. 4).

14. Regarding claims 18 and 28, Traub et al. and Gober disclose the essential features of the claimed invention as described above except for each of the amplifiers has an output impedance of approximately fifty (50) ohms to seventy-five (75) ohms. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include amplifiers has an output impedance of approximately fifty (50) ohms to seventy-five (75) ohms, since it has been held that where the general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Further, it is well known in the art to have amplifiers with an output impedance of approximately fifty (50) ohms to seventy-five (75) ohms to provide an optimum skin-electrode impedance model that enhances signal processing.

15. With respect to claim 19, Traub et al. disclose amplifiers are constructed to obtain the difference between the signals on the first and second electrodes and the amplifiers provide a differential relationship (Figs. 3–4).

16. Regarding claim 22, Traub et al. discloses the first and second amplifiers have substantially identical characteristics (Fig. 4) and the first and second electrodes have substantially identical characteristics (45, 46).

17. Regarding claim 24, Traub et al. disclose each of the first and second amplifiers has a low output impedance with substantially identical characteristics (Fig. 4; column 4, lines 24–25).

18. With respect to claim 27, 30, and 32 Traub et al. discloses each of the amplifiers has an output impedance considerably less than the input impedance of the amplifier (column 7, lines



Art Unit: 3762

49–50) (claim 27); electrodes having identical characteristics (45, 46) and amplifiers having identical characteristics (49, 50) (claim 30); the amplifiers include a pair of transistors having terminals respectively connected to the first and second electrodes (Fig. 4) (claim 32).

19. Regarding claim 31, Traub et al. do not disclose a low pass filter is formed from a plurality of capacitors differentially connected to a pair of amplifiers. However, Gober discloses a low pass filter is formed from a plurality of capacitors differentially connected to a pair of amplifiers (42') to improve and enhance signal processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Traub et al. to include a low pass filter is formed from a plurality of capacitors differentially connected to a pair of amplifiers, as taught by Gober to provide an optimally performing device for signal processing

20. With respect to claim 40, Traub et al. disclose electrodes have identical characteristics (45, 46) and wherein amplifiers have identical characteristics (Fig. 4). Traub et al. do not disclose a differential circuit operates as a low pass filter. However, Gober discloses a differential circuit operates as a low pass filter (Fig. 2, element 42) to improve and enhance signal processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Traub et al. to include a differential circuit operates as a low pass filter, as taught by Gober to provide an optimally performing device for signal processing.

Art Unit: 3762

21. Claims 3, 5, 16, 17, 20, 23, 26, are rejected under 35 U.S.C. 103(a) as being unpatentable over Traub et al. and Gober as applied to claims 1, 2, 13, 21, and 25 above, and further in view of Callahan et al., U.S. Patent 4,424,816.

22. Traub et al. disclose amplifiers have a substantially identical construction (Fig. 4). Further, Traub et al. and Gober disclose the essential features of the claimed invention as described above except for an input impedance of an amplifier is approximately  $10^{15}$  ohms. However, Callahan et al. disclose an input impedance of an amplifier is approximately  $10^{15}$  ohms (column 5, lines 39–41) to effectively provide immunity to noise signals and render more accurate parameter data sensing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the modified inventions of Traub et al. and Gober, as taught by Callahan et al. to render optimum and effective parameter sensing.

23. Regarding claim 20, Traub et al. and Gober disclose the essential features of the claimed invention as described herein and above except for each of the amplifiers has an output impedance of approximately fifty (50) ohms to seventy-five (75) ohms. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include amplifiers has an output impedance of approximately fifty (50) ohms to seventy-five (75) ohms, since it has been held that where the general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Further, it is well known in the art to have amplifiers with an output impedance of approximately fifty (50) ohms to seventy-five (75) ohms to provide an optimum skin-electrode impedance model that enhances signal processing.

24. Claims 6–12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hannula, U.S. Patent Application Publication 2002/0021813, and in view of Traub et al., U.S. Patent 5,427,111.

25. Regarding claims 6, Hannula discloses an electrode constructed to be applied to one of the selective positions of a patient's skin to provide a signal representative of a patient's parameters at this selective position (paragraph [0031], lines 2–4), an amplifier connected to an electrode to amplify the signal at the electrode without producing noise resulting from movements of a patient (Fig. 6; paragraph [0031], lines 8–15; paragraph [0028], lines 1–4), and a low pass filter connected to the amplifier to provide an output in which any remaining noise is eliminated and signals in a particular frequency range are passed by the low pass filter (paragraph [0031], lines 13–18). Hannula does not disclose an amplifier having characteristics of providing a high input impedance and a low output impedance. However, Traub et al. disclose an amplifier having characteristics of providing a high input impedance and a low output impedance (column 4, lines 24–25) to provide optimum parameter sensing capabilities of a device. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Hannula to include an amplifier having characteristics of providing a high input impedance and a low output impedance, as taught by Traub et al. to render optimum and effective device parameter sensing.

26. Hannula discloses a second electrode connected to a patient's skin provides a reference (paragraph [0031], lines 2–4) and an amplifier constitutes a differential amplifier for eliminating noise from the signals provided by an electrode (claim 7) (Fig. 6; paragraph [0031], lines 2–4 and 8–18); an amplifier includes a differential stage for eliminating noise from the signals provided by the electrode (claim 8) (Figs. 4A and 6; paragraph [0031], lines 2–4 and 8–18;

Art Unit: 3762

paragraph [0028], lines 1–8); an output of an amplifier is introduced to the low pass filter (claim 10) (Fig. 6).

27. Hannula does not disclose an amplifier provides an input impedance approaching infinity (claim 9). However, Traub et al. disclose an input impedance approaching infinity (column 10, lines 6–8) to effectively provide immunity to noise signals and render more accurate parameter data sensing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Hannula to include an input impedance approaching infinity, as taught by Traub et al. to optimize effective data sensing measurements and device performance.

28. With respect to claim 11, Hannula discloses a low pass filter limits an amplitude of an output from a low pass filter to facilitate the operation of an amplifier in processing a signal (Fig. 6), but does not disclose an amplifier has a low output impedance. However, Traub et al. disclose an amplifier has a low output impedance (column 4, lines 24–25) to provide optimum parameter sensing capabilities of a device. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Hannula to include an amplifier has a low output impedance, as taught by Traub et al. to render optimum and effective parameter sensing.

29. Regarding claim 12, Hannula discloses an output from an amplifier is introduced to a low pass filter (Fig. 6) and a low pass filter limits an amplitude of an output from a low pass filter to facilitate the operation of an amplifier in processing the signals (Figs. 2 and 6; paragraph [0025]). Hannula does not disclose an amplifier provides an input impedance approaching infinity and an amplifier has a low output impedance. However, Traub et al. disclose an input

impedance approaching infinity (column 10, lines 6–8) and an amplifier has a low output impedance (column 4, lines 24–25) to effectively provide immunity to noise signals and render more accurate parameter data sensing and to provide optimum parameter sensing capabilities of a device. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Hannula to include an input impedance approaching infinity and an amplifier has a low output impedance, as taught by Traub et al. to optimize effective data sensing measurements and device performance and to render optimum and effective parameter sensing.

30. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Traub et al. and Gober as applied to claim 26 above, and further in view of, Yonce, U.S. Patent Application Publication 2001/0021813.

31. Traub et al. and Gober disclose the essential features of the claimed invention as described above except for a second low pass filter differentially connected to the output terminals of the amplifiers for passing low frequency signals representing the difference between signals on output terminals of the amplifiers. However, Yonce discloses a second low pass filter differentially connected to the output terminals of the amplifiers for passing low frequency signals representing the difference between signals on output terminals of the amplifiers (Fig. 6B) to improve and enhance signal processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the modified inventions of Traub et al. and Gober to include a second low pass filter differentially connected to the output terminals of the amplifiers for passing low frequency signals representing the

Art Unit: 3762

difference between signals on output terminals of the amplifiers, as taught by Yonce to provide an optimally performing device for signal processing.

32. Claims 33–34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hannula and Traub et al. as applied to claim 6 above, and further in view of, Yonce, U.S. Patent Application Publication 2001/0021813.

33. With respect to claim 33, Hannula discloses an amplifier has an input and an output and a low pass filter is a first low pass filter and is connected to the output of an amplifier to provide an output in which noise is eliminated and signals in a particular frequency range are passed by a low pass filter (Fig. 6) and a low pass filter is connected between an electrode and an input of an amplifier to eliminate noise and to pass signals in a particular frequency range (Fig. 6). Hannula and Traub et al. nowhere disclose an explicit representation of a first low pass filter and a second low pass filter. However, Yonce in Figure 6B elements 650 and 675 teaches a first low pass filter and a second low pass filter to provide effective immunity to noise signals for a desired output signal sensing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the modified inventions of Hannula and Traub et al. to include a first low pass filter and a second low pass filter, as taught by Yonce to generate clear and accurate output signal sensing.

34. Regarding claim 34, Hannula discloses a first low pass filter operates on a differential basis (Fig. 6). Hannula and Traub et al. do not disclose a first low pass filter and a second low pass filter operates on a differential basis. However, Yonce discloses a first low pass filter and a second low pass filter operates on a differential basis (Fig. 5A) to enhance signal-to-noise

Art Unit: 3762

characteristics of a desired output signal. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the modified inventions of Hannula and Traub et al. to include a first low pass filter and a second low pass filter operates on a differential basis, as taught by Yonce to render optimum and effective signal data.

35. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blancke as applied to claim 36 above, and in view of, Gober, U.S. Patent 5,052,398.

36. Blancke discloses the essential features of the claimed invention as described above except for a circuit operates as a low pass filter. However, Gober discloses a circuit operates as a low pass filter (Fig. 2, element 42) to improve and enhance signal processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Blancke to include a circuit operates as a low pass filter, as taught by Gober to provide an optimally performing device for signal processing.

### *Conclusion*

37. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Terri L. Smith whose telephone number is 571-272-7146. The Examiner can normally be reached on Monday - Friday, between 7:30 a.m. - 4:00 p.m..

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Angela Sykes can be reached on 571-272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Art Unit: 3762

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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GEORGE D. EVANISKO  
PRIMARY EXAMINER  
7/20/06